UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,785	08/28/2003	Yu Jing Ting	37042-191882	5599

				EXAMINER
26694	7590	01/09/2006		ABRAHAM, ESAW T

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ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/649,785	TING ET AL.
	Examiner	Art Unit	
	Esaw T. Abraham	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All　b)☐ Some * c)☐ None of:

　　　1.☒ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date <u>*01/06/05, 11/04/04*</u>.
4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.　　Claims 1-10 are presented for examination.

Priority

2.　　Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d).

Information Disclosure Statement

3.　　The examiner considers the IDS filed on 01/06/05 and 11/04/04.

Specification

4.　　The **title** of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

Drawings

5.　　The drawings (5, 6 and 10-12) are objected to:

　　a) Because figures 5, 6 and 10-12 should be designated by a legend such as – **prior art** -

in order to clarify what is applicant's invention (see MPEP 608.02(g)).

Claim objections

6.　　Claim 1-10 are objected to because of the following informalities:

　　a) Claim 1 recites "to calculates" instead of "to calculate" (see claim 1 line 3).

　　b) Please change "which normalises" to ---for normalising--- (see claim 1 line 5).

　　c) Please change "which normalises" to ---for normalising--- (see claim 1 line 8).

　　d) Please change "A decoder" to ---the decoder" (see line 1 of claim 2).

　　e) Please change "A decoder" to ---the decoder" (see line 1 of claim 2).

f) Please change "A decoder" to ---the decoder" (see line 1 of claim 3).

g) Please change "A decoder" to ---the decoder" (see line 1 of claim 4).

h) Please change "A decoder" to ---the decoder" (see line 1 of claim 5).

i) Please change "A decoder" to ---the decoder" (see line 1 of claim 6).

j) Please change "A decoder" to ---the decoder" (see line 1 of claim 7).

k) Please change "A decoder" to ---the decoder" (see line 1 of claim 9).

l) Please change "A decoder" to ---the decoder" (see line 1 of claim 10).

m) Please change "the switch" to ---the switching means" (see line 1 of claim 4).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U. S. C 112

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject

matter which the applicant regards as his invention.

7.   Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

a) Claim 1 recites, "said next states estimates" which is inconsistent with what was

Previously recited (i.e. "a next iterative state") therefore, the recitation lack an antecedent basis

(see line 5 of claim 1).

b) Claim 1 recites, "said normalised and said unnormalised next state estimates next

states estimates" therefore, the recitation lack an antecedent basis (see lines 6 and 8 of claim 1).

c) Claim 8 recites, "said next states estimates" which is inconsistent with what was

previously recited (i.e. "a next iterative state") therefore, the recitation lack an antecedent basis

(see line 5 of claim 1).

The applicant must revise the claims to remove all the claim objections and 35 U.S.C.

112 errors. The claims are generally narrative and indefinite, failing to conform to current

practice. They are replete with grammatical and idiomatic errors. The claims need to be revised

to remove all grammatical errors as well as 112 issues some of which the examiner has pointed

out.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere* CO., 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness
      or nonobviousness.

8.   Claims **1-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants'

submitted prior art in view of Hepler et al. (U.S. PN: 6,961,921).

As per claims 1 and 7:

Applicants' admitted prior art figure 1 teaches a decoder includes a processor whereby the processor comprising a beta competition block inputs (see figure 5) coupled to a normalizer for normalizing a next step estimates and the output of the estimates coupled back to the processor. Applicants' admitted prior art does not explicitly teach a switch or multiplexer coupled to the normalizer. However, Hepler et al. in analogous art teach a pipeline architecture for MAP decoder and further Hepler et al. in figure 3 teach a turbo decoder comprising a calculation stages (24 and 26) calculate alpha and normalize the alpha calculations and each alpha value is calculated on the input register (22) as well as the previously calculated alpha value provided at input (24b) and outputted from calculation stage (26) through multiplexer (28) and register (30), which holds eight calculated values and furthermore the output of register 30 is coupled to the input of alpha memory (32) which stores the first calculated alpha value at the first memory location (32a) and also provides the calculated alpha value to input (24b) (see col. 3, lines 1-23). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to include a switching circuit or a multiplexer as taught by Hepler et al. for selecting next estimates. This modification would have been obvious because a person having ordinary skill in the art would have been motivated in order to achieve a reduction in calculation time and an increase in speed of decoding operation (see col. 5, lines 1-9).

As per claim 2:

Applicants' admitted prior art in view of Hepler et al. teach all the subject matter claimed in claim 1 including Hepler et al. teach an efficient pipeline architecture for processing MAP algorithm (see col. 1, lines 6-10).

As per claims 3 and 4:

Applicants' admitted prior art in view of Hepler et al. teach all the subject matter claimed

in claim 1 including Hepler et al. in figure 3 teach a turbo decoder comprising a calculation

stages (24 and 26) calculate alpha and normalize the alpha calculations and each alpha value is

calculated on the input register (22) as well as the previously calculated alpha value provided at

input (24b) and outputted from calculation stage (26) through multiplexer (28) and register (30),

which holds eight calculated values (see col. 1, lines 6-10).

As per claims 5 and 6:

Applicants' admitted prior art in view of Hepler et al. teach all the subject matter claimed

in claim 1 including Hepler et al. in figure 3 teach that calculated alpha value provided at input

(24b) and outputted from calculation stage (26) through multiplexer (28) and register (30), which

holds eight calculated values (see col. 1, lines 6-10).

As per claims 8 and 10:

Applicants' admitted prior art figure 1 teaches a decoder includes a processor whereby

the processor comprising a beta competition block inputs (see figure 5) coupled to a normalizer

for normalizing a next step estimates and the output of the estimates coupled back to the

processor. Applicants' admitted prior art does not explicitly teach pipeline means or a register

coupled to the normalizer. However, Hepler et al. in analogous art teach a pipeline architecture

for MAP decoder and further Hepler et al. in figure 3 teach a turbo decoder comprising a

calculation stages (24 and 26) calculate alpha and normalize the alpha calculations and each

alpha value is calculated on the input register (22) as well as the previously calculated alpha

value provided at input (24b) and outputted from calculation stage (26) through multiplexer (28)

and register (30), which holds eight calculated values and furthermore the output of register 30 is

coupled to the input of alpha memory (32) which stores the first calculated alpha value at the

first memory location (32a) and also provides the calculated alpha value to input (24b) (see col.

3, lines 1-23). Therefore, it would have been obvious to a person having an ordinary skill in the

art at the time the invention was made to include a register or a pipeline means as taught by

Hepler et al. for storing estimates. This modification would have been obvious because a person

having ordinary skill in the art would have been motivated in order to achieve a reduction in

calculation time and an increase in speed of decoding operation (see col. 5, lines 1-9).

As per claim 9:

Applicants' admitted prior art in view of Hepler et al. teach all the subject matter claimed

in claim 8 including Hepler et al. in figure 3 teach that calculated alpha value provided at input

(24b) and outputted from calculation stage (26) through multiplexer (28) and register (30), which

holds eight calculated values (see col. 1, lines 6-10).

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

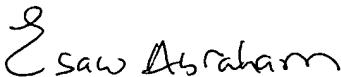US PN: 6,871,316   Wong et al.

US PN: 6,304,996   Van Stralen et al.

9.   Any inquiry concerning this communication or earlier communication from the examiner

should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner

can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for after final communications.

Information regarding the status of an Application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Esaw Abraham

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